Socio-spatial disparities in Belgium

Looking for pockets of poverty and wealth using egocentric neighbourhoods

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Extended abstract
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Background and aims

Socio-spatial disparities are a persistent reality in Europe (Musterd, 2005; Cassiers and Kesteloot, 2012) and increasingly a matter of public policy concern (Kleinhans, 2004; Galster, 2007; Bolt, 2009). In fact, an extensive literature has shown that the physical separation of deprived minorities can be a considerable threat to social cohesion (Cassiers and Kesteloot, 2012), hindering citizen participation (Kühn, 2015), access to jobs (Andersson, 2004; Dujardin et al., 2008) and to education (Andersson and Malmberg, 2014), and occasionally leading to urban unrest and riots (Olzak et al., 1996; Malmberg et al., 2014)

Belgium scores high in socio-spatial disparities in the European context (Musterd, 2005). At the scale of the country, an important concentration of deprived populations in the old industrial belt (Mons–Charleroi–Liege) contrasts with the well-off suburban areas around the cities of Brussels, Antwerp and Ghent (Hermia and Eggerickx, 2012). Spatial inequalities are especially high in Brussels: in the past decades, the European capital has attracted both working migrants from non-Western countries and high-profile expats involved in the international institutions (UE, NATO), a situation that reinforces segregation in the city (Kesteloot and Van der Haegen, 1997). These socio-spatial inequalities have an attested negative impact on individual chances in the Brussels labour market (Dujardin et al., 2008)

The vast majority of the existing studies have examined socio-spatial disparities based on predefined administrative units such as municipalities, neighbourhoods and statistical wards. Such units often differ in size, function and distribution across different regions and over time. This problem, known as Modifiable Areal Unit Problem (MAUP), affects

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any quantitative analyses of segregation (Openshaw, 1984; Wong, 2004; Reardon and O'Sullivan, 2004). What is more, administrative units might blur spatial inequalities occurring at finer levels and conceal the real pockets of poverty and wealth.

The purpose of this paper is to identify the pockets of poverty and wealth in Belgium and in Brussels. Using a nearest-neighbours approach to construct egocentric neighbourhoods, our research allows the observation of socio-spatial disparities at highly detailed level, independently of fixed administrative units.

Data and methods

The construction of egocentric neighbours is made possible by the availability of geocoded data from the 2011 Belgian Census. Our approach consists in expanding a geographical buffer around grids of 100×100 metres, until the buffer contains a pre-determined number of neighbours (Östh et al., 2015). Since our aim is to find pockets of poverty and wealth at a fine level, we will focus on the 200 to 800 nearest neighbours, which represent the immediate surroundings of individuals. The sample of neighbours obtained from this procedure is then used to compute a set of socioeconomic indicators:

- share of neighbours at risk of poverty (i.e. with income lower than 60% of the national median);
- share neighbours with high income (i.e. highest decile);
- share of persons 25–64 years old who have completed tertiary education;
- share of persons 30–59 years old in employment;
- share of persons who received social assistance in 2011.

In a fist step, we will use these indicators in an hierarchical clustering analysis in order to study the spatial distribution of the different dimensions of social inequality. The mapping of the clusters will reveal the most important spatial concentrations of both deprived and well-off populations in Belgium with an unparalleled level of detail. Moreover, both the ethnical and socioeconomic composition of the clusters will be assessed.

Next, we will focus on Brussels and investigate different aspects of the areas where the most poor and the most rich are located. To do so, we will rely on several indicators available at the level of the 118 quarters (*quartiers*) of the city:

- political representation;
- access to public transport;
- evolution of housing prices;
- availability of child daycare;
- frequentation of streets;
- availability of social housing.

In studying these indicators, we intend to produce a clearer picture of the structural conditions in the pockets of poverty and wealth inside the city.

Preliminary findings and future work

At this point, we have constructed the egocentric neighbourhoods and calculated several indicators of the neighbourhood socioeconomic composition (share of people with tertiary education, employment and social assistance) as well as ethnic composition (share of first- and second-generation migrants of EU and non-EU origin). The data related to income (share of neighbours at risk of poverty and the share of neighbours with high income) are not yet available to us; however, we are working in close collaboration with Statistics Belgium and we expect to obtain these data very shortly.

The first maps produced with egocentric neighbourhoods for Belgium (figure 1) show the interesting spatial patterns of poverty and wealth. In particular, the maps depict the striking concentration of low-educated populations and low levels of employment in the old industrial belt in Wallonia, as well as in the northern part of the Brussels-Capital-Region. These areas are highly contrasted with the well-off south-east of Brussels and the rich sub-urban areas around the capital.

The clustering analysis will allow to better explore these patterns in a multidimensional perspective, taking into account different measures of socioeconomic inequalities. Moreover, the detailed study of socio-spatial disparities in Brussels should elucidate the structural and political conditions in the most segregated areas of the capital.

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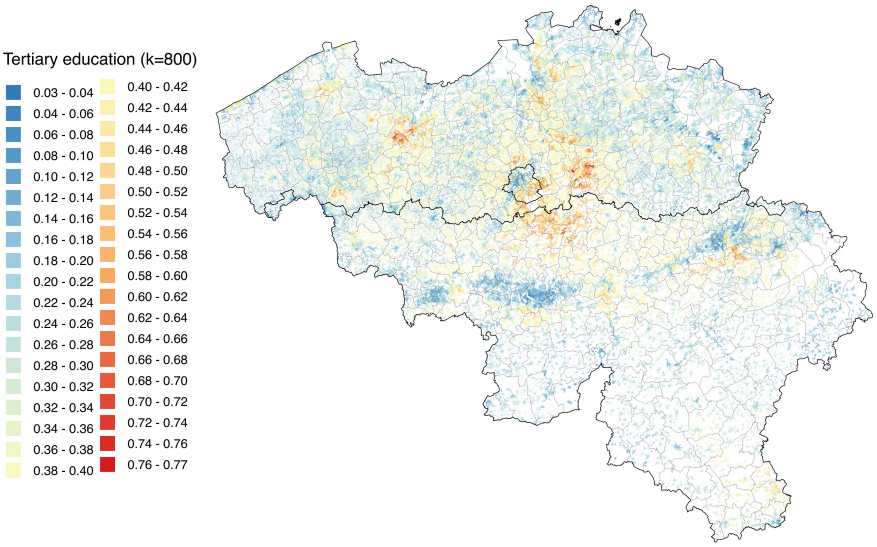
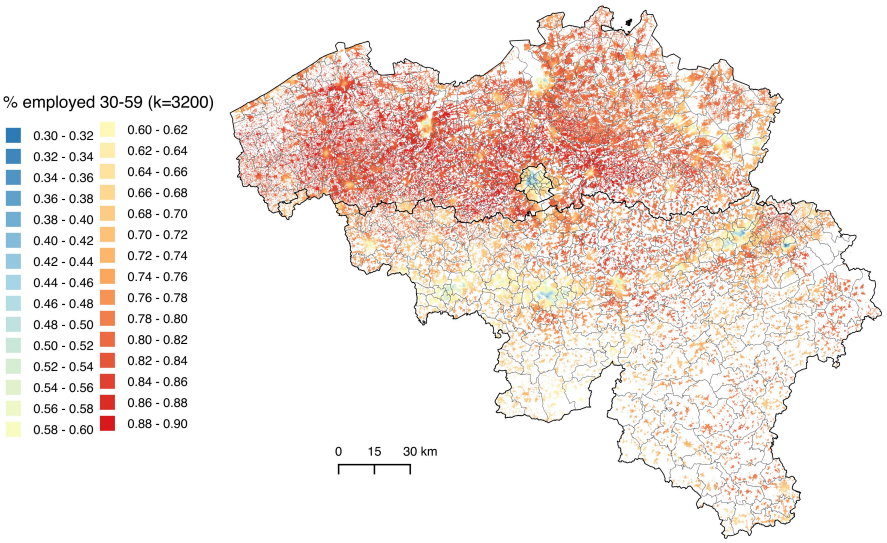


(a) People with tertiary education among the 800 nearest neighbours



(b) People in employment among the 3,200 nearest neighbours

Figure 1: Patterns of socio-spatial inequalities in Belgium using egocentric neighbourhoods

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